EMIP Industry Day Information Briefing:

Understanding TWV Capability Gaps in the Context of the JCIDS Process

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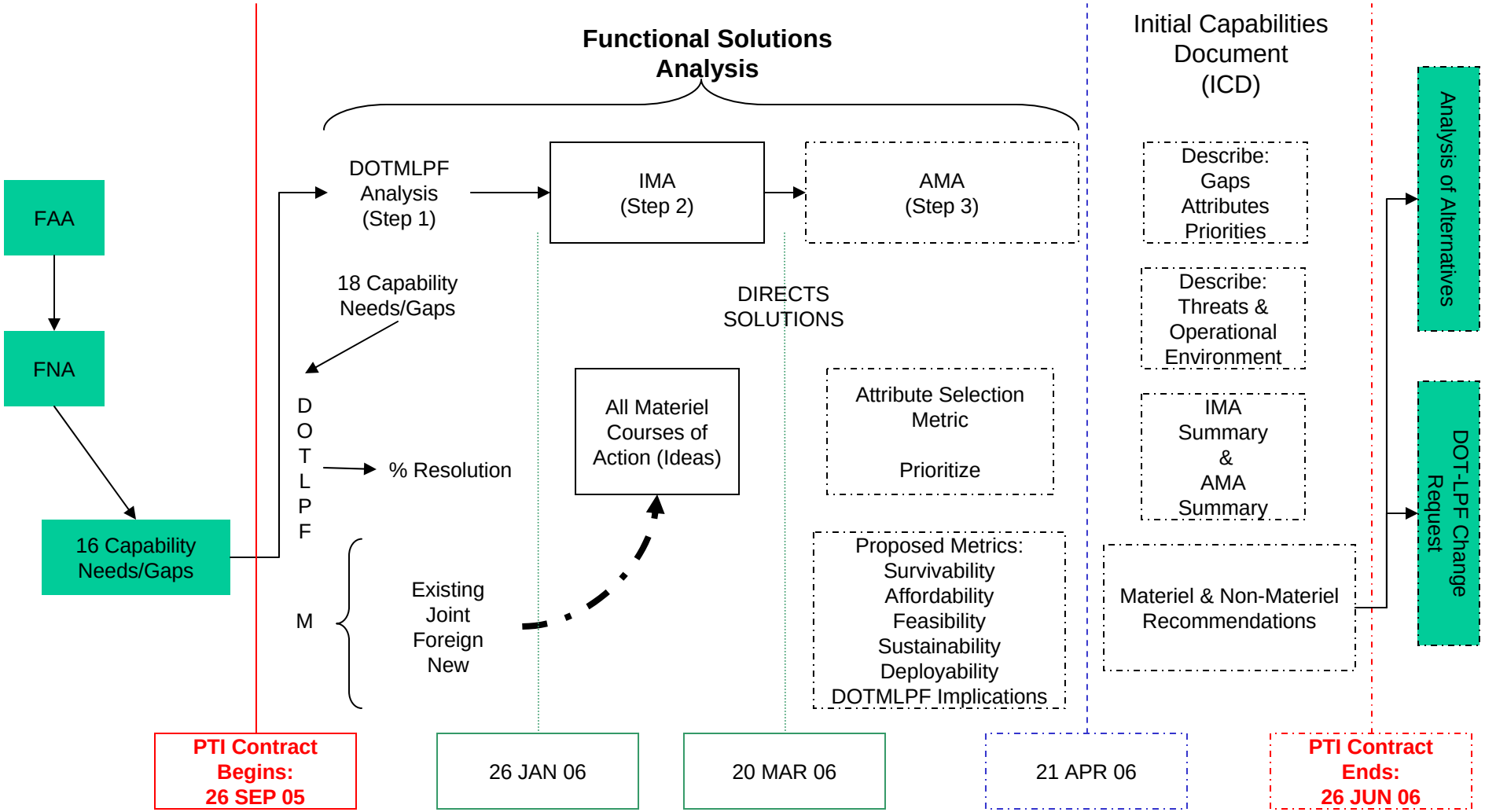
OVERVIEW

- JCIDS Process Timeline
- **TWV Functional Needs Analysis (FNA) Capability Gaps**
- IMA Functional Solutions Analysis (FSA) Primer
- **DOTMLPF Analysis Capability Gaps**
- IMA Introduction & Methodology
- IMA Process
- IMA Example: "Gap 1"
- AMA Introduction
- ICD Introduction
- EMIP-Centric Summary

JCIDS Process Timeline



TWV FNA Capability Gaps

	Capability Gaps	Light	Medium	Heavy	Trailers
Survivability and Lethality	**Army Gap 1**: Lack sufficient availability of crew protection systems (active and passive) to protect the crews and enable un-interrupted distribution support.	X	X	X	X
	Army Gap 2a: Lack capability for mounting crew served weapons on M915s and Heavy Equipment Transporter (HET)			X	
	Army Gap 2b: Lack sufficient availability of crew served weapons (M240, Mk 19, M2 etc) and mounts for installation on vehicles	X	X	X	
Knowledge and SU	**Army Gap 3**: Lack sufficient availability of C4ISR systems to provide command and control of convoy operations and ability to communicate long range to provide adequate situational awareness	X	X	X	
	Army Gap 4: Inability to conduct realistic mission planning and rehearsal for convoys and other TWV operations.	X	X	X	
	Army Gap 5: Lack sufficient availability of in-transit logistics tracking capability to enable end to end asset visibility and distribution based logistics	X	X	X	X
Sustainability	**Army Gap 6**: Lack sufficient loading, transloading and offloading capability.		X	X	X

	Capability Gaps	Light	Medium	Heavy	Trailers
Sustainability	**Army Gap 7:** Lack sufficient on-board MHE to support Future Combat Systems (FCS) unit of action with direct interface with the future combat vehicles.		X	X	
	Army Gap 8: Current TWV cannot load or off-load flatracks from the C-130.		X	X	
	Army Gap 9: Lack sufficient reliability and maintainability to ensure continuous operational availability for theater distribution operations, and to support the two level maintenance concept.	X	X	X	X
	Army Gap 10: Lack ability to provide logistical support while minimizing the logistics footprint.	X	X	X	
Versatility	**Army Gap 11:** Inability to conduct operations during periods of limited visibility (e.g. dust, fog, smoke, etc)	X	X	X	
	Army Gap 12: Light Infantry Transport, Medical Evacuation, and Reconnaissance Capability.	X			
Deployability	**Army Gap 13:** Inability to transport current vehicle mounted shelters on C130 aircraft without dismounting the shelter	X	X	X	
	Army Gap 14a: Inability of HMMWV shelter carrier variants to avoid overloads once armor has been added to the vehicle.	X			
	Army Gap 14b: Trucks, trailers, and semi-trailers do not have adequate basis issue item (BII) tie-down.	X	X	X	

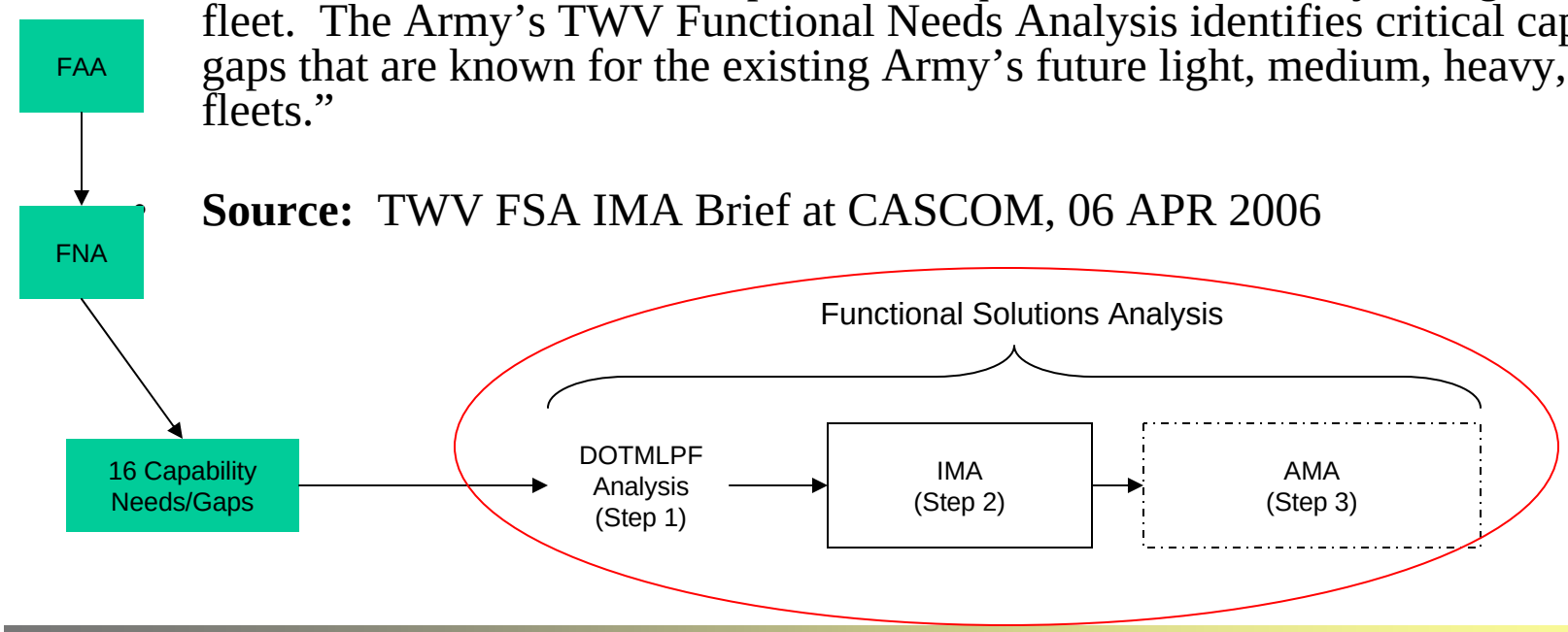
NOTE: FNA Approved by FC 3 November 2005

FSA Problem Statement (Functional Solutions Analysis)

- **Problem Statement:**

  "Current and future joint operating concepts require a fleet of light, medium, and heavy tactical wheeled vehicles that perform reconnaissance, maneuver, maneuver support, maneuver sustainment, and command and control capabilities in support of the deployed forces. The Joint Light Tactical Vehicle Initial Capabilities Documents identified new capabilities required for the future joint light vehicle fleet. The Army's TWV Functional Needs Analysis identifies critical capability gaps that are known for the existing Army's future light, medium, heavy, and trailer fleets."

- **Source:** TWV FSA IMA Brief at CASCOM, 06 APR 2006



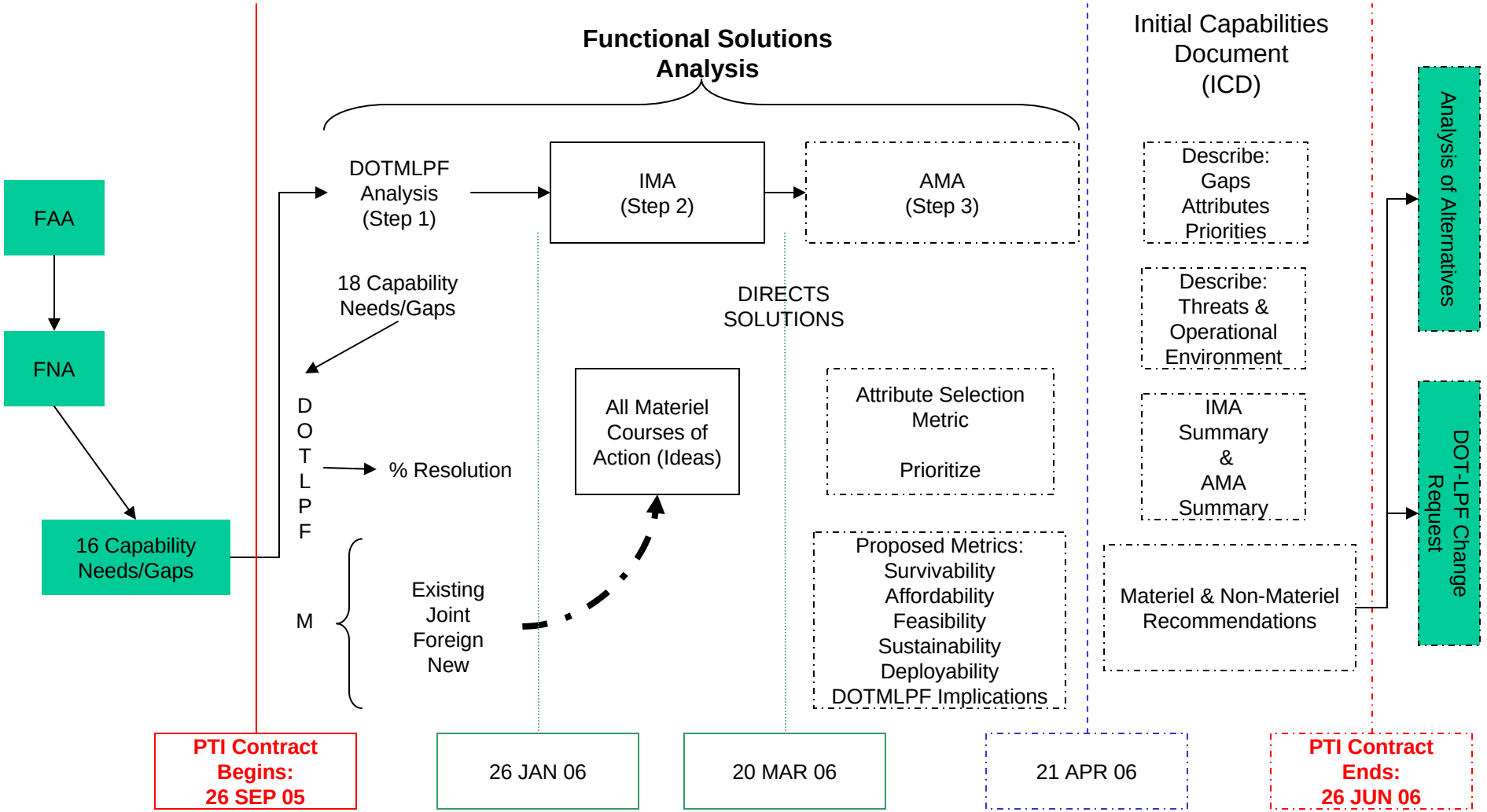
FSA Path Forward

- TWV Fleet Modernization & FTTS ACTD Strategy establishes technology demos, platform demos, new demonstrator builds, & demos that will inform the *process* for identifying potential solutions to TWV capability gaps (at this point, EMIP becomes an input variable).
  - Determine best approach to solve gaps thru materiel & non-materiel approaches.
  - Implement materiel solutions thru improvements to current vehicles and/or thru new production vehicles

- The IMA portion of the FSA captures potential Ideas for Materiel/ Non-materiel solutions from the TWV-FM & FTTS ACTD that potentially solve the gaps.

- The Analysis of Materiel Approaches (AMA) portion of the FSA prioritizes the materiel approaches & informs the final FSA & ICD or DOT-LPF Change Recommendations.

JCIDS Process Timeline



FSA Step 1: DOTMLPF Analysis

Capability Gap Summary Table

GAP	Fully Meets	Partially Meets	Does Not Meet	Not Applicable
Gap 1	M	T	DLF	OP
Gap 2A	M	O	DTL	PF
Gap 2B	O	M	DTLF	P
Gap 3		DOTML		PF
Gap 4		DOTML		PF
Gap 5	M	DOTL		PF
Gap 6	M		DOTL	PF
Gap 7	M		DOTL	PF
Gap 8	M		DOT	LPF

GAP	Fully Meets	Partially Meets	Does Not Meet	Not Applicable
Gap 9		DTML		OPF
Gap 10	M		DOT	LPF
Gap 11	M	DOT		LPF
Gap 12A	M		DOTL	PF
Gap 12B	M	T	DOL	PF
Gap 12C	M		DOTL	PF
Gap 13	M	O	DT	LPF
Gap 14A		OM		DTLPF
Gap 14B	MO		D	TLPF

NOTE: Gap 12 expansion brings total capability gaps to 18.

EMIP TWV Capability Gap Crib Sheet

Gap 1: CPK AoA

Gap 2A: CSW Mounting Capability

Gap 2B: CSW & Mount Availability

Gap 3: C4ISR

Gap 4: Mission Planning

Gap 5: In Transit Tracking/Location

Gap 6: Loading, Transfer, Offloading

Gap 7: On-board MHE

Gap 8: C-130 Flatrack Offloading

Gap 9: Reliable 2-level Maintenance

Gap 10: Dismounted Support

Gap 11: Visibility Enhancement

Gap 12: Transport, MEDEVAC & Recon

Gap 13: C-130 Shelter Transport

Gap 14A: AoA Overloads

Gap 14B: Tie Downs

DOTMLPF Analysis

Gap 12A: Conduct Maneuver Sustainment/ MEDEVAC

Gap 12B: Conduct Mounted Maneuver

Gap 12C: Conduct Undetected Mobile Reconnaissance

IMA Introduction & Methodology

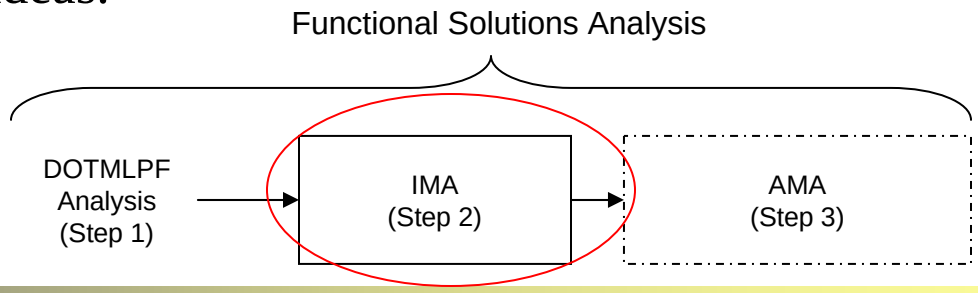
(Ideas for Materiel/Non-Materiel Approaches)

The IMA Does:

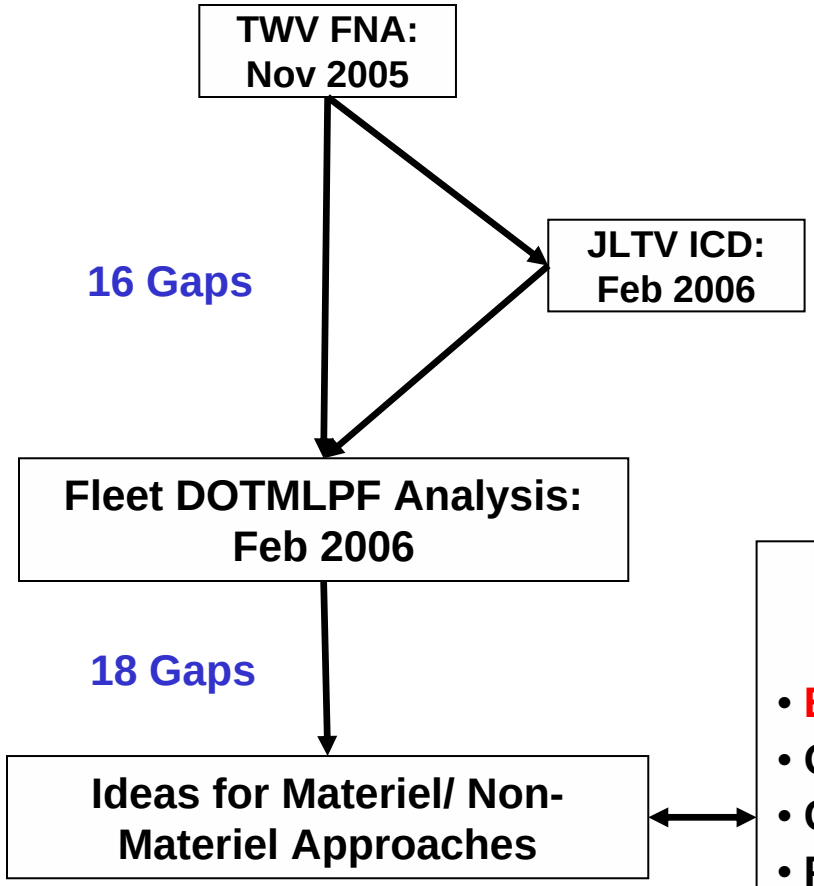
- Follow the DOTMLPF Analysis and is the *Second Step of the FSA.*
- Identify Materiel/ Non-Materiel Approaches at the system concept level.
- Include existing and emerging materiel programs that can be modified to meet the Capability Gap.
- Identify Platform Capabilities and Approaches required to resolve the Capability Gap.
- Informs the Analysis of Materiel Approaches (AMA) during Step 3.

The IMA Does Not:

- Identify specific “systems” or “system components” for use.
- Identify priorities of ideas.



IMA Process



CASCOM OBJECTIVE:
Incorporate Demo Inputs into TWV Fleet FSA

IMA SOURCE DATA

- **EMIP Technology Demonstration Jan 06**
- **ONR Trade Study & Demonstrator Jan - Oct 06**
- **CFPI Demonstration Feb-Mar 06**
- **Platform Systems Demonstration Aug 06**
- **FTTS Military Utility Assessment Sep/Oct 06**
- **TRADOC Modeling & Simulation (CASCOM, TRAC)**

TWV FNA Capability Gaps

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NOTE: FNA Approved by FC 3 November 2005

IMA Example: "Gap 1"

Capability Gap 1: Lack sufficient availability of crew protection systems (active and passive) to protect the crews and enable un-interrupted mission support.

Materiel/Non-Materiel Approaches

- Decrease Crew Protection Kit weight by using some type of composite/ceramic polymer armor.
- New vehicle design that incorporates self defense weapons, ISR, C4I, semi-active and passive armor.
- Develop a ceramic polymer composite light weight reflective armor which can be formed into most any shape (octagon, etc.).
- Install vehicle blast bucket personnel protection kit integrated into vehicle design.
- Stay with existing "A" & "B" heavy steel add on armor kits and upgrade vehicle performance.
- Integral armor (shaped vehicle design) which combines cab structure and armor into one with inner and outer hull design.
- Full Spectrum Active Protection Systems (Like Layered Shield).
- Integrate fuel truck/tank and fuel tanker (trailer) protection capabilities.

IMA Gap 1 Materiel Ideas Considered

Fleet Approach

- All TWVs must have or readily accept an armor package that meets LTAS and CPPK CPD Standards (Lt, Med, Hvy, Trailers).
- Armor shall not detract from vehicle mission suitability.
- Solution must address FTTS STAR for Future Threat Environment.

Program of Record

- OIF Armor Solutions in theater include combination of fabricated and pre-fabricated vendor solutions.
- LTV: M1114, M1152, M1151 Program Lines.
- MTV: LCAC and LCAC-H Cab Development.

Technology Insertion Ideas

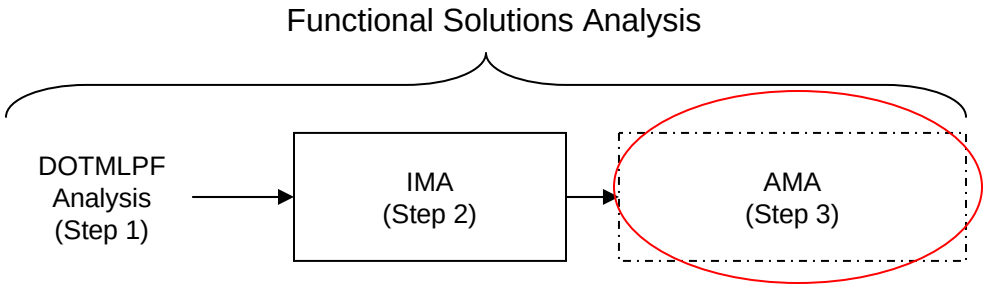
- Improve interim CPKs to CPPK standards.
- Integrate fuel truck/tank protection capabilities.
- Improve M1114 drive train and engine to meet ORD requirements.
- Improve fleet safety features to handle weight of armor (e.g. emergency braking, crash protection, rollover protection, restraint systems, ingress, egress, fire suppression).
- Incorporate brackets for emerging Active Protection Systems (e.g. TRPS, IADDS, CREW II, etc.).

Platform Design Ideas

- OIF Gun Truck Modules.
- EMIP (Demonstrated 9 Safety/Survivability Capabilities).
- CFPI Demonstrated Vehicles.
- Platform Systems Demonstration.
- FTTS ACTD: 3 Demonstrator Vehicles.

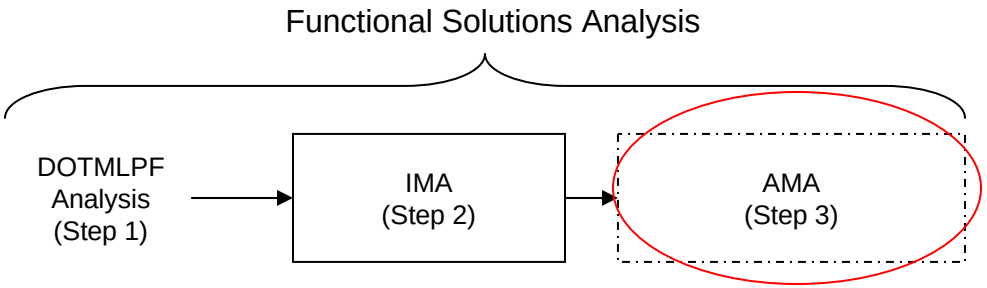
AMA Introduction
(Analysis of Materiel Approaches)

- Third & Final Step of the FSA.
- Purpose: "To assess the IMA & develop a prioritized list of alternatives that has considered, as a minimum, the metrics identified in the FNA."
- Inputs:
  - Attributes and Metrics
    - Feasibility
    - Survivable
    - Deployable
    - Sustainable
    - Affordable
  - Applicability to light, medium, heavy, trailers.
  - AMA Worksheet (SME Priority Vote forms).

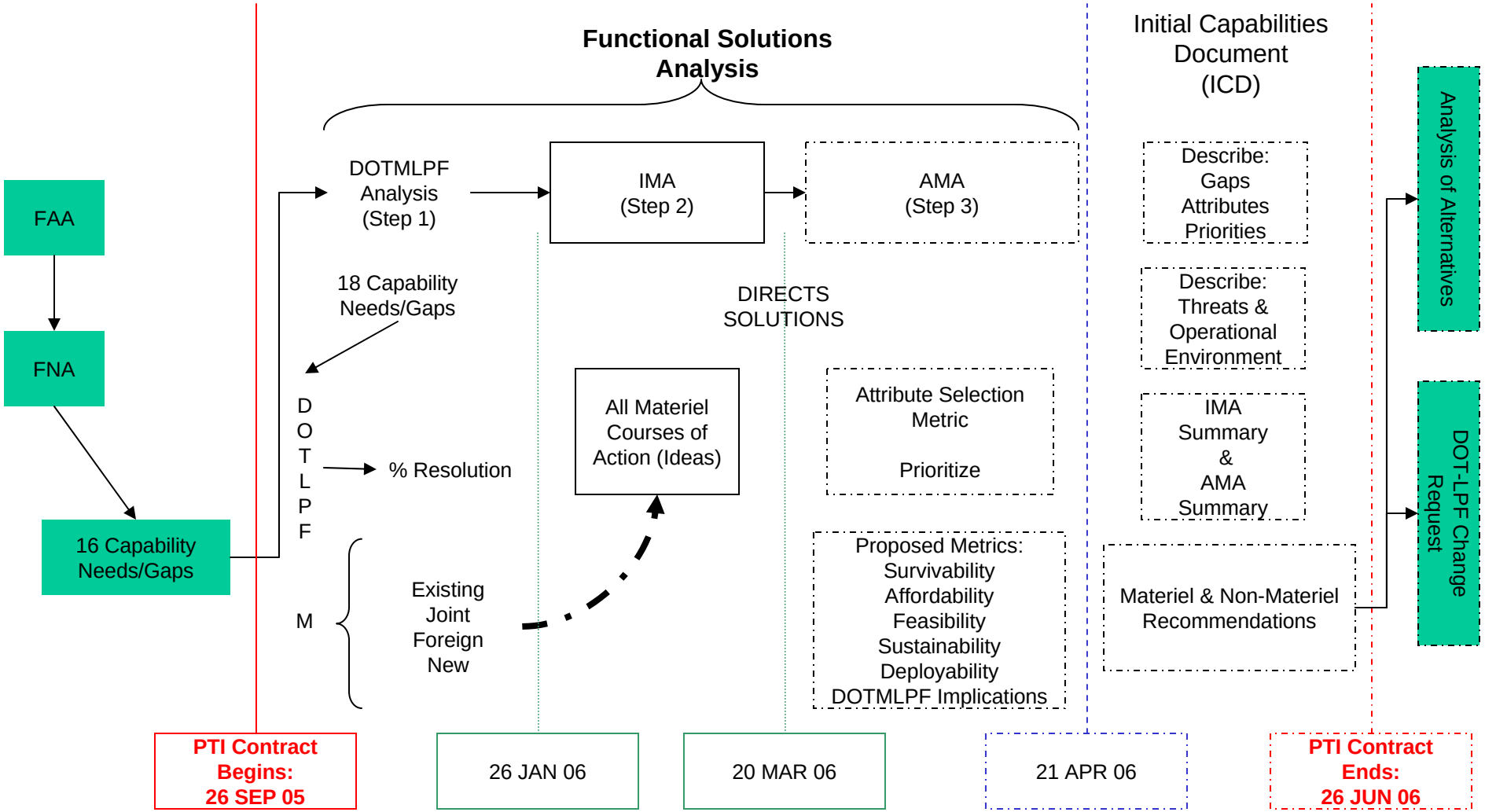


AMA Introduction (cont.)

- Outputs/Products:
  - Prioritized list of materiel/ non-materiel approaches for analysis in the Post Independent Analysis (PIA).
  - Sets framework for Initial Capabilities Document (ICD); Focus for PSD data collection work, TWV Modernization priorities, EMIP Jan 2007, & E2E distribution modeling.
  - DOTMLPF considerations and implications



JCIDS Process Timeline



ICD Introduction

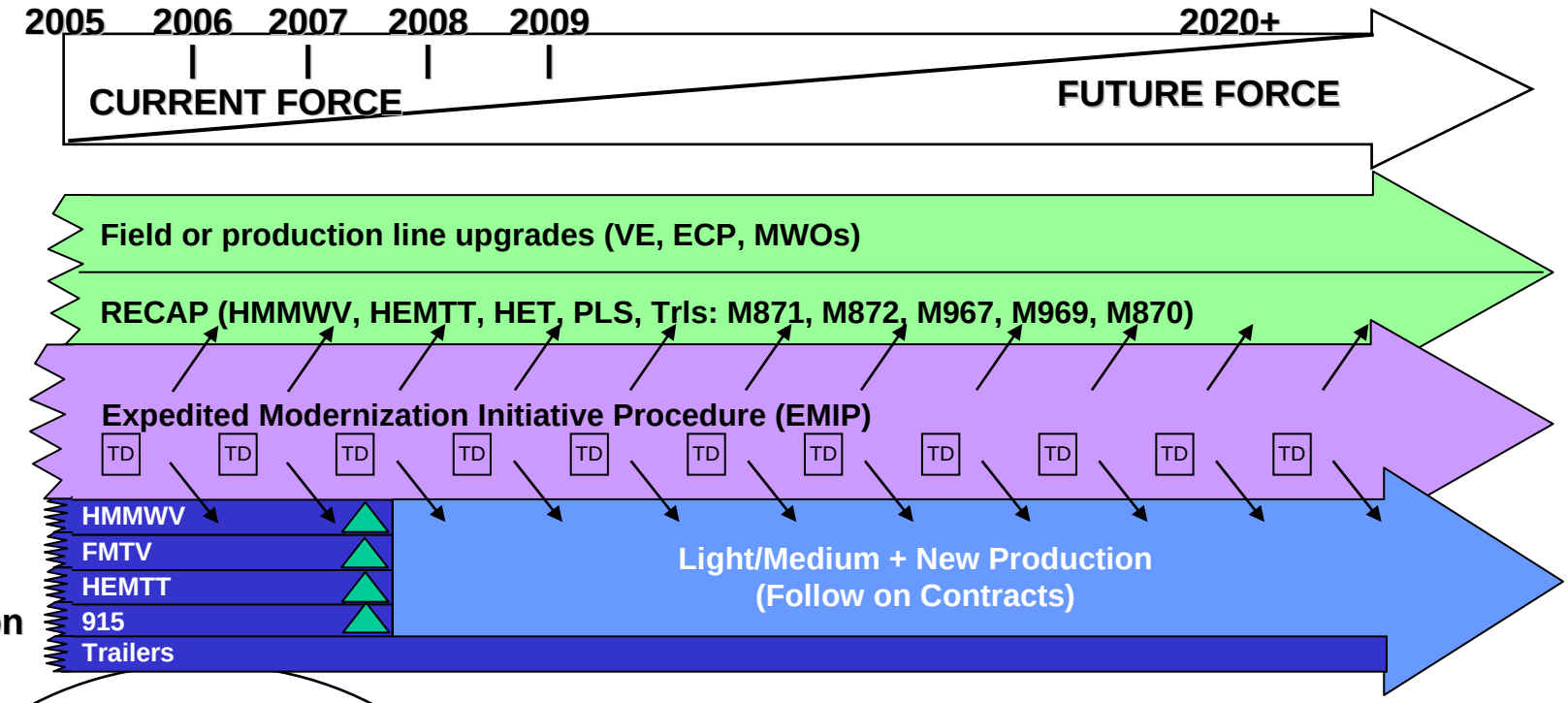
- **Definition:** "Official Document that Summarizes the FSA (DOTMLPF, IMA, and AMA) that is taken forward to AROC."
- **Recommends:**
  - Tech Insert Ideas for Current Fleet (i.e., EMIP Current TAIs).
  - New TWV Program Starts.
  - New Program Start (Non-TWV Program).
  - Could be a combination of recommendations for one gap.
- Initiates Combat Developments Process to Explore Materiel Solutions.
- Initiates RDTE to mature prioritized technologies.
- Initiates BOIP and MTOE non-Materiel changes.

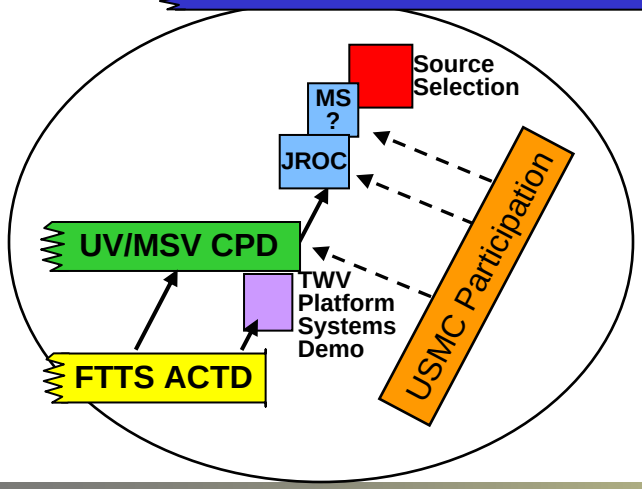
DRAFT ICD Available 26 June 2006.
Working to Extend Contract Support Through PSD (Aug/Sep 06).

EMIP-Centric Summary

- EMIP TAIs that can be linked to one of the 18 TWV Capability Gaps will be “wired-in” to the IMA, which feeds the AMA.
- EMIP TAIs that are rated “Current” are assessed during the AMA for insertion into current fleet to mitigate gaps.
- EMIP TAIs rated “Future” enter the AMA as candidates for mitigating gaps during new production, RDTE, etc. and become input into the ICD.
- “Don’t Fight The Gap.”

TWV STRATEGY





1. Future Tactical Truck System Advanced Concept Technology Demonstration – Part I on-going (evaluate technologies/integrate into design). Part II – Manufacture demonstrator vehicles for Military Utility Assessment
2. Tactical Wheeled Vehicle Platform Systems Demo – All firms (international/domestic) with TWV systems invited to participate
3. Capability Production Document – Based on comprehensive knowledge of all applicable technologies flowing from ACTD and Rodeo efforts
4. Joint Requirements Oversight Council – Decide between HMMWV, FMTV, HEMTT or UV and MSV CPDs
5. (if required) Defense Acquisition Board will review proposed projects
6. Source Selection – Implements milestone decisions through competitive selection of truck producers

Option call up/extension decision

Source Selection

CPD: Capability Production Document
ECP: Engineering Change Proposal
FTTS: Future Tactical Truck System
JROC: Joint Requirements Oversight Council
TD: TWV Transformation Demo (2nd Qtr each FY)
MSV: Maneuver Sustainment Vehicle
MS: Milestone
MWO: Modification Work Order
RECAP: Recapitalization
TWV: Tactical Wheeled Vehicle
UV: Utility Vehicle
VE: Value Engineering

QUESTIONS?

TRADOC CAPABILITY MANAGER
TRANSPORTATION
(TCM-TRANS)

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